

**Claims**

1. A flexible coupling capable of transmitting moments and comprising a first member having a longitudinal axis connected by at least three joints to a second member having a longitudinal axis substantially aligned with the longitudinal axis of the first member, the joints being circumferentially spaced apart about said axes, each joint comprising a first part on one of the members and a second part on the other member, the parts of each joint interfitting so that moments can be transmitted between said members by the joints and so that relative sliding and rotational movement can take place between the parts of each joint, the joint parts on at least one of the members being flexibly arranged so that the members may articulate relative to one another.
2. A flexible coupling according to Claim 1 wherein each joint comprises a pin carried by one of the members and a socket carried by the other member, the pin fitting into the socket so as to be located by the socket and so that moments can be transmitted between said members by the joint and so that relative sliding and rotational movement can take place between each pin and the socket which receives it.
3. A flexible coupling capable of transmitting torque and comprising a first member having a rotary axis connected by at least three joints to a second member having a rotary axis, the joints being circumferentially spaced apart about said axes, each joint comprising a first part on one of the members and a second part on the other member, the parts of each joint interfitting so that torque can be transmitted between said members by the joint and so that relative sliding and rotational movement can take place between the parts of each joint, the joint parts on at least one of the members being flexibly arranged so that the members may articulate relative to one another.
4. A flexible coupling capable of transmitting torque from a first member having a rotary axis via a second member to a third member having a rotary axis, the first member being connected to the second member and the second member being connected to the third member by joints, there being at least three joints between the first and second members and between the second and third members respectively, the joints being circumferentially

spaced about said axes, each joint comprising a first part on one of the members which is connected by the joint and a second part on the other connected member, the parts of each joint interfitting so that torque can be transmitted between said members by the joint and so that relative sliding and rotational movement can take place between the parts of each joint, the joint parts on at least one of the members being flexibly arranged so that the first and third members may articulate relative to one another.

5. A flexible coupling according to Claim 3 or Claim 4 wherein each joint comprises a pin carried by one of the members and a socket carried by the other member, the pin fitting into the socket so that torque can be transmitted by the joint and so that relative sliding and rotational movement can take place between each pin and the socket which receives it.
6. A flexible coupling according to any preceding claim wherein the joint parts are mounted flexibly on only one member.
7. A flexible coupling according to any of Claims 1 to 5 wherein the joint parts are mounted flexibly on more than one member.
8. A flexible coupling according to Claim 2 or Claim 5 or either of Claims 6 and 7 when dependent from Claim 2 or Claim 5, wherein the pins or sockets are mounted on a ring and are interconnected by flexible elements.
9. A flexible coupling according to Claim 2 or Claim 5 or either of Claims 6 and 7 when dependent from Claim 2 or Claim 5, wherein the pins and/or sockets are mounted on a rigid member to which they are connected by flexible elements.
10. A flexible coupling according to any of Claims 2, 5, 8 and 9, wherein the longitudinal axes of the sockets and pins are in a single plane.
11. A flexible coupling according to any of Claims 2, 5, 8 and 9, wherein the axes of some

of the sockets and pins lie in one plane and the longitudinal axes of the remaining sockets and pins lie in a second plane parallel to the first plane.

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12. A flexible coupling according to Claims 8 or either of Claims 10 and 11 when dependent from Claim 8, wherein the sockets and/or pins are connected by flexible elements which are bowed in shape.
13. A flexible coupling according to any of Claims 8 to 12 wherein the sockets are formed by inserts received in bores in a ring, the bores being flexibly interconnected.
14. A flexible coupling according to any of Claims 8 to 13 wherein the pins have part-spherical heads received in cylindrical bores in the sockets.
- 10 15. A flexible coupling according to any of Claims 8 to 13 wherein the pins have cylindrical surfaces which are engaged with cylindrical bores in the sockets or inserts.
16. A flexible coupling according to any of Claims 8 to 15 wherein the joints are pin and socket joints and the pins are detachably connected to the member on which they are carried.
- 15 17. A flexible coupling according to Claim 5 when dependent from Claim 4, wherein the first member comprises a wheel having internally projecting radial pins, the second member comprises a ring on which sockets are mounted, the sockets being inter-connected by flexible members, some of the sockets receiving the pins on the wheel and the third member having outwardly projecting pins which are received in the remainder of the sockets.
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18. A flexible coupling according to Claim 17 wherein the sockets contain inserts in the form of bushes in which the pins are received.
19. A flexible coupling according to Claim 18 wherein the inserts are a snap-fit into the

sockets.

- 5           20.    A flexible coupling according to any preceding claim including a flexible annular disc having sockets secured thereto at positions spaced equi-angularly about the disc and two members each having a rotary axis and a plurality of outwardly projecting pins and wherein the pins of each of the two members are received in alternate sockets on the disc.
21.    A flexible coupling according to Claim 20 wherein all the sockets are arranged to project inwardly from the disc and the pins on the members project outwardly.
- 10          22.    A flexible coupling according to Claim 20 wherein the sockets project inwardly and outwardly from the disc and each of said members has radially inwardly and outwardly directed pins which are received in the inwardly and outwardly directed sockets respectively.
23.    A flexible coupling according to Claim 8 wherein the sockets are formed in or carried by a ring which comprises two parts which are detachably secured together, each said ring part providing a portion of each socket so that when the ring parts are secured together
- 15          the socket portions are aligned to form the sockets, each ring part including flexible elements which inter-connect the socket portions on the ring part.
24.    A flexible coupling according to Claim 23 wherein the ring parts are identical.
25.    A flexible coupling according to Claim 23 or Claim 24 wherein the ring parts clip together.
- 20          26.    A flexible coupling according to any of claims 23 to 25 wherein the ring parts are prevented from becoming detached from each other by inserts received in the sockets and which receive the pins.